

# LINEAR MONOLITHIC INTEGRATED CIRCUITS

## Miscellaneous Type

Type No.	Function	Maximum Ratings (Ta=25°C)	Electrical Characteristics (Ta=25°C)								
			Item	Symbol	Condition	min.	typ.	max.	Unit		
AN6811	3, 4, 8, 12, 16 Frequency Divider	V <sub>CC</sub> = 15V I <sub>CC</sub> (I <sub>14</sub> ) = 30mA P <sub>D</sub> = 350mW T <sub>opr</sub> = -20 ~ +75°C T <sub>stg</sub> = -65 ~ +150°C	"L" Level Output Voltage	V <sub>OL</sub>	V <sub>CC</sub> = 15V, I <sub>OL</sub> = 6mA V <sub>IT</sub> = 0, V <sub>IS</sub> = 15V			0.4	V		
					V <sub>CC</sub> = 9V, I <sub>OL</sub> = 5mA V <sub>IT</sub> = 0, V <sub>IS</sub> = 9V			0.4	V		
			"H" Level Output Voltage	V <sub>OH</sub>	V <sub>CC</sub> = 15V, I <sub>OH</sub> = -1mA V <sub>IT</sub> = 0, V <sub>IS</sub> = 15V	13			V		
					V <sub>CC</sub> = 9V, I <sub>OH</sub> = -1mA V <sub>IT</sub> = 0, V <sub>IS</sub> = 9V	7			V		
			"L" Level Input Voltage (TKS)	V <sub>IL</sub>		0		0.5	V		
			"H" Level Input Voltage (TKS)	V <sub>IH</sub>	V <sub>CC</sub> ≥ V <sub>IT</sub> , V <sub>IK</sub> , V <sub>IS</sub>	4		15	V		
			"L" Level Input Current	-I <sub>IL</sub>	V <sub>CC</sub> = 15V, V <sub>I</sub> = 0			1.5	mA		
			"H" Level Input Current	I <sub>IH</sub>	V <sub>CC</sub> = 15V, V <sub>I</sub> = 15V			100	μA		
Total Circuit Current	I <sub>tot</sub>	V <sub>CC</sub> = 15V, V <sub>IT</sub> = 0			30	mA					
AN6875 AN6876	5-Dot LED Driver Circuits	V <sub>CC</sub> = -0.5 ~ 18V I <sub>CC</sub> = 18mA P <sub>D</sub> = 550mW T <sub>opr</sub> = -20 ~ +75°C T <sub>stg</sub> = -55 ~ +150°C	LED ON Input Voltage	LED1	V <sub>ON1</sub>	V <sub>CC</sub> = 16V	AN6875			1.12	V
				LED2	V <sub>ON2</sub>					1.86	V
				LED3	V <sub>ON3</sub>					3.10	V
				LED4	V <sub>ON4</sub>					5.18	V
				LED5	V <sub>ON5</sub>					8.66	V
			LED OFF Input Voltage	LED1	V <sub>OFF1</sub>			0.80	V		
				LED2	V <sub>OFF2</sub>			1.49	V		
				LED3	V <sub>OFF3</sub>			2.54	V		
				LED4	V <sub>OFF4</sub>			4.28	V		
				LED5	V <sub>OFF5</sub>			7.23	V		
			LED ON Input Voltage	LED1	V <sub>ON1</sub>	V <sub>CC</sub> = 16V	AN6876		1.8	2.02	V
				LED2	V <sub>ON2</sub>				2.4	2.69	V
				LED3	V <sub>ON3</sub>				3	3.36	V
				LED4	V <sub>ON4</sub>				3.6	4.03	V
				LED5	V <sub>ON5</sub>				4.1	4.59	V
			LED OFF Input Voltage	LED1	V <sub>OFF1</sub>			1.58	1.8	V	
				LED2	V <sub>OFF2</sub>			2.11	2.4	V	
				LED3	V <sub>OFF3</sub>			2.64	3	V	
				LED4	V <sub>OFF4</sub>			3.17	3.6	V	
				LED5	V <sub>OFF5</sub>			3.61	4.1	V	
Load Current	(Pin 6)	I <sub>6</sub>	V <sub>CC</sub> = 16V I <sub>7</sub> = 4.25mA	V <sub>O</sub> = 1.2V	13	16	mA				
	(Pin 1 ~ 4)	I <sub>1</sub> ~ I <sub>4</sub>		V <sub>O</sub> = 2.5V	13	16	mA				
	(Pin 1 ~ 4, 6)	I <sub>1</sub> ~ I <sub>4</sub> , I <sub>6</sub>		V <sub>O</sub> = 16V		16	19	mA			
Input Current	I <sub>8</sub>	V <sub>CC</sub> = 16V	AN6875 V <sub>8-5</sub> = 8.7V			50	μA				
			AN6876 V <sub>8-5</sub> = 8.5V			5	mA				
Supply Current	I <sub>9</sub>	V <sub>CC</sub> = 16V, V <sub>8-5</sub> = 16V			18	mA					
Output Leak Current	I <sub>1</sub> ~ I <sub>4</sub> , I <sub>6</sub>	V <sub>CC</sub> = 16V, V <sub>O</sub> = 16V			15	μA					
Operating Voltage Range	V <sub>CC</sub> (opr)			12		16	V				
AN6875 : Logarithmic Response AN6876 : Linear Response											

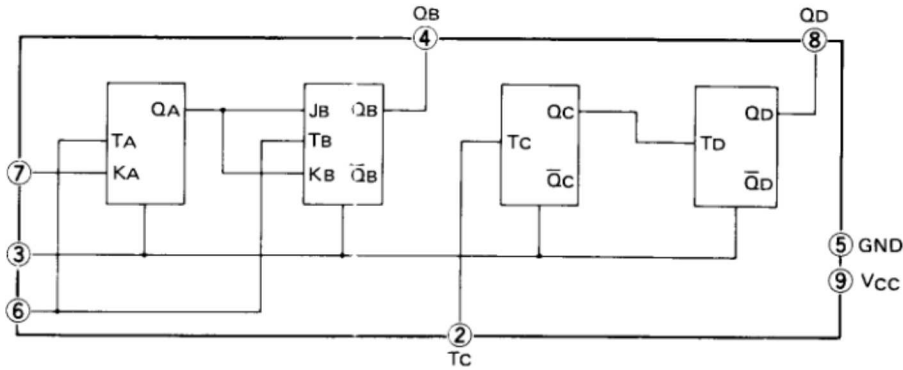
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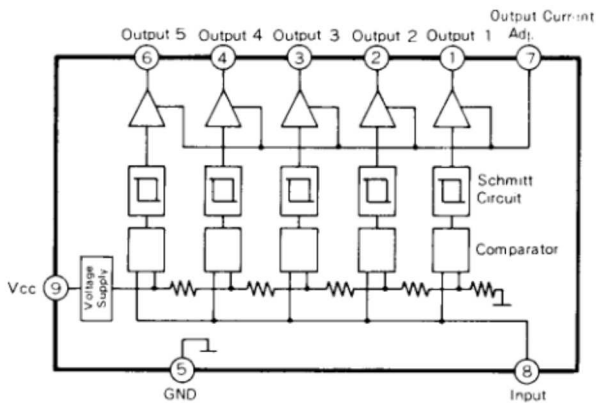
Block Diagram

Application Circuit

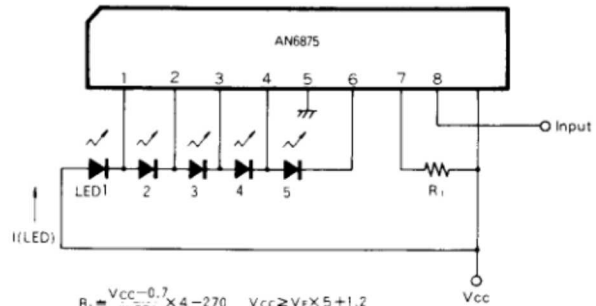
AN6811 (Package I-7,9-Lead Plastic SIL)



AN6875 (Package I-7,9-Lead Plastic SIL)



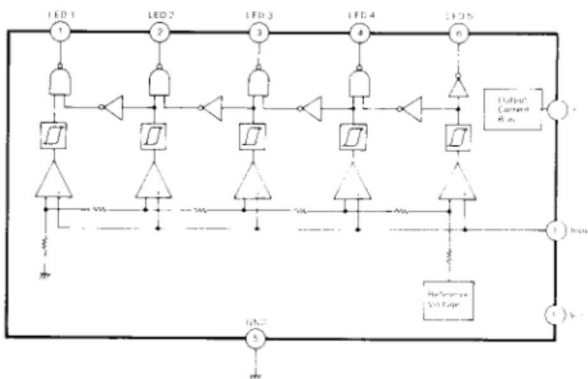
## 1. Bar Graph Display



$$R_1 = \frac{V_{cc} - 0.7}{I(\text{LED})} \times 4 - 270 \quad V_{cc} \geq V_f \times 5 + 1.2$$

Note: If voltage at pin ⑥ is high with 5 LEDs turning on, insert a resistor in the anode side of LED 1 for reducing the P.D.

AN6876 (Package I-7,9-Lead Plastic SIL)



## 2. Dot Display

